

Nippon Telegraph and Telephone East Corporation
Nippon Telegraph and Telephone Corporation

NTT Plans Trial of "Biportable" Personal Wireless Broadband Service Using Optical Fiber and High Speed Wireless Technology

NTT East and NTT are planning to conduct trials of a new broadband wireless service, called Biportable,^{*1} for six months from March to August of this year. To be tested mainly in the area around Tokyo's Shibuya Station, the service is expected to develop into an important new means of communication in the emerging broadband age. The trial service will gauge the business potential of this service as well as exploring its impact on everyday life style.

The service will be implemented by combining the optical IP network of NTT East with AWA,^{*2} the high-speed wireless access technology developed as a world-first by the NTT Access Network Service Systems Laboratories (AS Lab).

*1: The name Biportable is derived from **B**roadband **I**P **P**latform with **O**ptical and **R**adio **T**echnical **A**bility. It expresses the curtain-raising on a new broadband era through the convergence of optical fiber and wireless technology.

*2: AWA stands for Advanced Wireless Access. This wireless access system is based on the Japanese national standards of the MMAC-PC (Multimedia Mobile Access Communication Systems Promotion Council) and ARIB (Association of Radio Industries and Businesses), as well as the European ETSI (European Telecommunications Standards Institute)-BRAN (Broadband Radio Access Networks) standards.

1. What Is "Biportable"? (an overview of the trial environment)

The "Biportable" service is being built along the following lines, in order to provide a simple, fast, high-quality broadband environment emphasizing the "personal" and "portable" aspects of the technology.

- (a) A broadband network is being built using optical fiber as the access lines. The goal is to enable stress-free access to rich (data-intensive) content.
- (b) Content servers, authentication servers and network management functions will be installed on the NTT East premises, achieving an end-to-end broadband communications infrastructure right up to the user terminals.
- (c) The AWA system developed by the AS Lab is being installed as the indoor system in homes, offices, shops and other facilities throughout the trial service area. Not only does this do away with the need for interior wiring, it also allows the same terminals to be used seamlessly across the service area.

2. Features of "Biportable" service (see [Attachment 1](#) for the system configuration)

- (a) 36 Mbps high-speed wireless access using AWA (indoor wireless sections)
 - (1) 36 Mbps high-speed access
 - For indoor access, a 5 GHz band wireless system achieves transfer speeds

of up to 36 Mbps, with measured bandwidth of more than three times that of existing 11 Mbps wireless LAN systems.

- The 36 Mbps bandwidth can be allocated flexibly between the directions to and from the terminal, as needed. For example, if video or other bandwidth-intensive data is being sent in one direction, more bandwidth can be allocated to that direction; whereas for a video conference or other two-way media the bandwidth can be set equally in both directions.
- Each [wireless access point \(base station\)](#) covers a radius of 100 meters and can serve as many as 122 users concurrently.

(2) Minimum bandwidth guarantee on wireless sections

- By guaranteeing a minimum bandwidth for users of wireless sections, the system provides stress-free enjoyment of video and other rich content not possible up to now.

(3) Terminal portability

- The authentication function in wireless base stations along with a location management function make it possible to use the same terminal at indoor sites throughout the service area, whether at home, in the office, on the college campus or out on the town, without changing any settings.

(b) High-speed optical IP network

(1) High-speed IP network (subscriber line part)

- Large data-handling capacity is achieved using optical fiber access lines along with gigabit (1 Gbps) and Fast Ethernet (100 Mbps) technologies. The result is a high-speed optical IP network capable of transferring data between wireless sections smoothly, maintaining maximum advantage of their 36 Mbps bandwidth.

(2) Delivery of rich content

- Servers supporting the latest streaming communications technology are deployed in the network, providing on-demand delivery of rich content in the several-Mbps range.
- Payment and authentication functions are implemented using electronic commerce servers, enabling provision of simulated payment information.

(3) Location management for seamless roaming

- The functions for managing terminal location are built into the network, and IP addresses are assigned to terminals dynamically by the network. This enables terminals to be used at any site throughout the trial area without having to change terminal settings when going from one place to another.

(4) A diverse offering of applications

- The optical IP network features flat multipoint connections, enabling direct communication between terminals as well as between terminals and servers.
- Security is provided by IP-VPN, enabling high-speed access to corporate networks from the home or from urban sites.

3. Outline of the Trial Service

(a) Trial period

March to August, 2001 (provisional)

(b) Location

Areas around Shibuya Station (Tokyo) including offices, homes and popular urban spots (see [Attachment 2](#)).

(c) Scale of the trial

[Wireless card terminals](#): 200

[Wireless terminals with built-in PDA](#): 200 (from May 2001)

(d) Trial participants (users)

- (1) The on-going trial users in offices and homes will be chosen from venture company employees working in the vicinity of Shibuya Station, heavy Internet users, university students, female office workers, housewives, and others.
- (2) Indoor demo stations will be set up near Shibuya Station in popular locations to let the public at large try out the service.

* The on-going trial users will make use of wireless card terminals and PDA terminals (from May). See [Attachment 3](#) on the equipment used for the trial.

(e) Content, applications, etc. ([Attachment 4](#))

More than 40 partner companies will provide content and applications, etc. during the trial period, as they look for ways to create new business models taking advantage of the service.

- ☐ Interactive model: Two-way interaction between the users and providers
- ☐ On-demand model: Enjoyment of rich content on demand
- ☐ Broadcasting model: Users and providers publish their own content
- ☐ Applications: Convenient functions for corporate and everyday use

4. Role of the Corporate Participants

(a) NTT East

- Building the advanced broadband IP network.
- Studying business models.
- Planning and operation of the trial service.

(b) NTT (AS Lab)

- Developing [wireless equipment \(access points\)](#) and terminals ([card-type](#) and [PDA terminal](#))
- Testing of the AWA technology
- Providing technical support for the trial service

(c) Corporate partners (listed in Attachment 5)

- Providing rich content
- Providing applications
- Setting up indoor kiosks, etc. (demo stations)
- Manufacturing supporting terminals
- Studying the life style and business potential

5. Formation of a Biportable Research Group

- (a) To help in exploring the life style and business potential in Biportable service, ideas on content and applications will be solicited on a Web page, etc., from trial users and the general public.
- (b) A Biportable Research Group is being formed with the participation of partner companies and outside experts, and with Neoteny Co., Ltd. serving as the Secretariat. The group will study content and applications focusing on the concepts of interactive, high quality, and personal.

6. Future Service

Based on the results of this trial service, a decision will be made on going ahead with deployment on a full scale.

- [Attachment 1](#)
[Trial System Configuration](#)
- [Attachment 2](#)
[Trial Locations](#)
- [Attachment 3](#)
[Wireless Equipment Used in the Trial Service](#)
- [Attachment 4](#)
[Provided content and applications](#)
- [Attachment 5](#)
[Corporate Partners](#)



Biportable wireless equipment
(access points)



Biportable terminals (card-type)



Biportable terminals (PDA terminal)

For more information, please contact:
NTT East Corporation
Planning Division
Mori or Kato
Tel. 03-5359-5329
E-mail: biportable@sinoa.east.ntt.co.jp

NTT Information sharing Laboratory Group
Kurashima, Sano or Ikeda
Tel. 0422-59-3663
E-mail: koho@mail.rdc.ntt.co.jp



[NTT NEWS RELEASE](#)